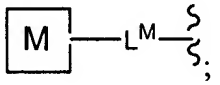
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

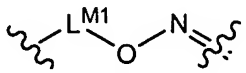
1. **(Original)** A conjugate comprising a carrier substituted with one or more occurrences of a moiety having the structure:



wherein each occurrence of M is independently a modifier; and

each occurrence of L^M is independently an oxime-containing linker.

2. **(Original)** The conjugate of claim 1, wherein each occurrence of L^M is independently a moiety having the structure:



wherein each occurrence of L^{M1} is independently a substituted or unsubstituted, cyclic or acyclic, linear or branched C_{0-12}alkylidene or C_{0-12}alkenylidene moiety wherein up to two non-adjacent methylene units are independently optionally replaced by CO, CO_2, COCO, $CONR^{Z1}$, $OCONR^{Z1}$, $NR^{Z1}NR^{Z2}$, $NR^{Z1}NR^{Z2}CO$, $NR^{Z1}CO$, $NR^{Z1}CO_2$, $NR^{Z1}CONR^{Z2}$, SO, SO_2, $NR^{Z1}SO_2$, SO_2NR^{Z1}, $NR^{Z1}SO_2NR^{Z2}$, O, S, or NR^{Z1}; wherein each occurrence of R^{Z1} and R^{Z2} is independently hydrogen, alkyl, heteroalkyl, aryl, heteroaryl or acyl.

3. **(Original)** The conjugate of claim 2, wherein one or more occurrences of L^{M1} independently comprises a maleimide- or N-hydroxysuccinimide ester-containing crosslinker.

4. **(Original)** The conjugate of claim 3, wherein one or more occurrences of L^{M1} independently comprises a 4-(N-maleimidomethyl)cyclohexane-1-carboxylate, m-maleimidobenzoyl or a 4-(p-maleimidophenyl)butyrate crosslinker.

5. **(Original)** The conjugate of claim 1, wherein one or more occurrences of M comprises, or is attached to the carrier through, a biodegradable bond.

6. **(Original)** The conjugate of claim 4, wherein the biodegradable bond is selected from the group consisting of acetal, ketal, amide, ester, thioester, enamine, imine, imide, dithio, and phosphoester bond.

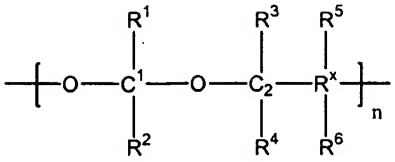
7. **(Original)** The conjugate of claim 1, wherein the carrier is a hydrophilic biodegradable polymer selected from the group consisting of carbohydrates, glycopolysaccharides, glycolipids, glycoconjugates, polyacetals, polyketals, and derivatives thereof.

8. **(Original)** The conjugate of claim 1, wherein the carrier is a naturally occurring linear and branched biodegradable biocompatible homopolysaccharide selected from the group consisting of cellulose, amylose, dextran, levan, fucoidan, carraginan, inulin, pectin, amylopectin, glycogen and lixenan.

9. **(Original)** The conjugate of claim 1, wherein the carrier is a naturally occurring linear and branched biodegradable biocompatible heteropolysaccharide selected from the group consisting of agarose, hyluronan, chondroitinsulfate, dermatansulfate, keratansulfate, alginic acid and heparin.

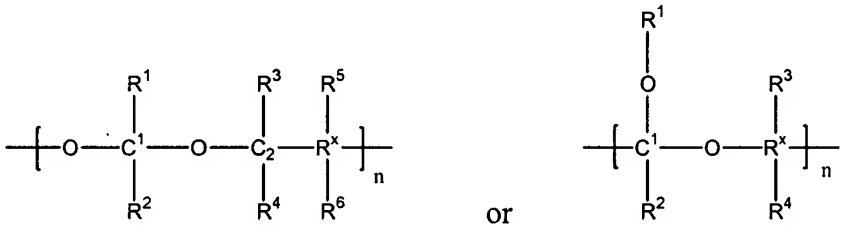
10. **(Original)** The conjugate of claim 1, wherein the carrier is a hydrophilic polymer selected from the group consisting of polyacrylates, polyvinyl polymers, polyesters, polyorthoesters, polyamides, polypeptides, and derivatives thereof.

11. **(Original)** The conjugate of claim 1, wherein the carrier is a biodegradable biocompatible polyacetal wherein at least a subset of the polyacetal repeat structural units have the following chemical structure:



wherein for each occurrence of the n bracketed structure, one of R^1 and R^2 is hydrogen, and the other is a biocompatible group and includes a carbon atom covalently attached to C^1; R^x includes a carbon atom covalently attached to C^2; n is an integer; each occurrence of R^3, R^4, R^5 and R^6 is a biocompatible group and is independently hydrogen or an organic moiety; and for each occurrence of the bracketed structure n, at least one of R^1, R^2, R^3, R^4, R^5 and R^6 comprises a carbonyl group suitable for oxime formation.

12. **(Original)** The conjugate of claim 1, wherein the carrier is a biodegradable biocompatible polyketal wherein at least a subset of the polyketal repeat structural units have the following chemical structure:



wherein each occurrence of R^1 and R^2 is a biocompatible group and includes a carbon atom covalently attached to C^1; R^x includes a carbon atom covalently attached to C^2; n is an integer; each occurrence of R^3, R^4, R^5 and R^6 is a biocompatible group and is independently hydrogen or an organic moiety; and for each occurrence of the bracketed structure n, at least one of R^1, R^2, R^3, R^4, R^5 and R^6 comprises a carbonyl group suitable for oxime formation.

13. **(Original)** The conjugate of claim 1, wherein one or more occurrences of M comprises a biologically active modifier.

14. **(Currently Amended)** The conjugate of ~~claim 8~~ claim 13, wherein one or more occurrence of M is selected from the group consisting of proteins, antibodies, antibody fragments, peptides, antineoplastic drugs, hormones, cytokines, enzymes, enzyme substrates, receptor ligands, lipids, nucleotides, nucleosides, metal complexes, cations, anions, amines,

heterocycles, heterocyclic amines, aromatic groups, aliphatic groups, intercalators, antibiotics, antigens, immunomodulators, and antiviral compounds

15. **(Original)** The conjugate of claim 1, wherein one or more occurrence of M comprises a detectable label.

16. **(Currently Amended)** The conjugate of ~~claim 10~~ claim 15, wherein one or more occurrence of M comprises atoms or groups of atoms comprising radioactive, paramagnetic, superparamagnetic, fluorescent, or light absorbing structural domains.

17. **(Currently Amended)** The conjugate of claim 1, wherein one or more occurrence of M comprises a ~~dignostic~~ diagnostic label.

18. **(Currently Amended)** The conjugate of ~~claim 12~~ claim 17, wherein one or more occurrence of M comprises radiopharmaceutical or radioactive isotopes for gamma scintigraphy and PET, contrast agent for Magnetic Resonance Imaging (MRI), contrast agent for computed tomography, contrast agent for X-ray imaging method, agent for ultrasound diagnostic method, agent for neutron activation, moiety which can reflect, scatter or affect X-rays, ultrasounds, radiowaves, microwaves and/or fluorophores.

19. **(Original)** The conjugate of claim 1, wherein the conjugate is water-soluble.

20. **(Original)** The conjugate of claim 1, wherein the conjugate comprises a biologically active modifier and a detectable label.

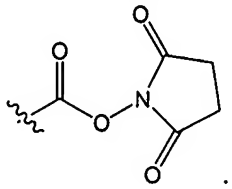
21. **(Original)** The conjugate of claim 1, wherein the carrier is a linear macromolecule, a branched macromolecule, a globular macromolecule, a graft copolymer, a comb copolymer, a nanoparticle or a lipid-based carrier.

22. **(Currently Amended)** The conjugate of ~~claim 16~~ claim 21, wherein the lipid-based carrier is a liposome.

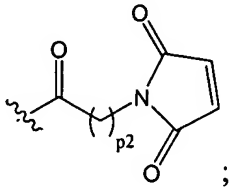
23. **(Original)** A compound having the structure $R^{N1}R^{N2}N\text{-}O\text{-}L^1$; wherein R^{N1} and R^{N2} are independently hydrogen, an aliphatic, alicyclic, heteroaliphatic, heterocyclic, aryl or heteroaryl moiety, or a nitrogen protecting group, or R^{N1} and R^{N2}, taken together with the nitrogen atom to which they are attached, form a substituted or unsubstituted heterocyclic or heteroaryl moiety; and L^1 is an aliphatic, alicyclic, heteroaliphatic, heterocyclic, aryl or heteroaryl moiety comprising a functional group adapted for covalent binding to a modifier.

24. **(Currently Amended)** The compound of ~~claim 24~~ claim 23, wherein L^1 is a moiety having the structure $-(CR^{L1}R^{L2})_p\text{-}Q\text{-}$, wherein p is an integer from 0-6, R^{L1} and R^{L2} are independently hydrogen, an aliphatic, alicyclic, heteroaliphatic, heterocyclic, aryl or heteroaryl moiety or WR^{W1} wherein W is O, S, NH, CO, SO_2, COO, CONH, and R^{W1} is hydrogen, an aliphatic, alicyclic, heteroaliphatic, heterocyclic, aryl, heteroaryl, alkylaryl or alkylheteroaryl moiety, and Q is a moiety comprising a functional group adapted for covalent binding to a modifier.

25. **(Currently Amended)** The compound of ~~claim 25~~ claim 24, wherein L^1 is $-(CH_2)_p$ wherein p is an integer from 0-5, and Q is a succinimidyl ester moiety having the structure:



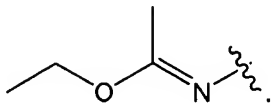
26. **(Currently Amended)** The compound of ~~claim 25~~ claim 23, wherein L^1 is $-(CH_2)_{p1}\text{-}CH(OH)CH_2NH\text{-}$ wherein p_1 is an integer from 1-5, and Q is a maleimidyl moiety having the structure:



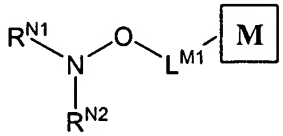
;

wherein p_2 is is an integer from 1-5.

27. **(Currently Amended)** The compound of ~~claim 24~~ claim 23, wherein $R^{N1}R^{N2}N$- is a moiety having the structure:

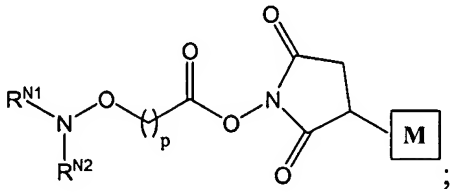


28. **(Original)** A compound having the structure:



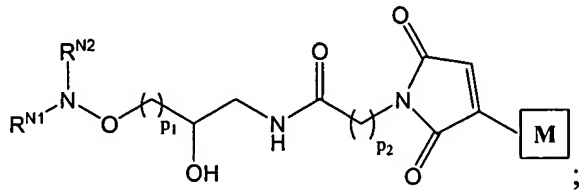
wherein M is a modifier; L^{M1} is a substituted or unsubstituted, cyclic or acyclic, linear or branched C_{0-12}alkylidene or C_{0-12}alkenylidene moiety wherein up to two non-adjacent methylene units are independently optionally replaced by CO, CO_2, COCO, $CONR^{Z1}$, $OCONR^{Z1}$, $NR^{Z1}NR^{Z2}$, $NR^{Z1}NR^{Z2}CO$, $NR^{Z1}CO$, $NR^{Z1}CO_2$, $NR^{Z1}CONR^{Z2}$, SO, SO_2, $NR^{Z1}SO_2$, SO_2NR^{Z1}, $NR^{Z1}SO_2NR^{Z2}$, O, S, or NR^{Z1}; wherein each occurrence of R^{Z1} and R^{Z2} is independently hydrogen, alkyl, heteroalkyl, aryl, heteroaryl or acyl; and R^{N1} and R^{N2} are independently hydrogen, an aliphatic, alicyclic, heteroaliphatic, heterocyclic, aryl or heteroaryl moiety, or a nitrogen protecting group, or R^{N1} and R^{N2} , taken together with the nitrogen atom to which they are attached, form a substituted or unsubstituted heterocyclic or heteroaryl moiety.

29. **(Currently Amended)** The compound of ~~claim 29~~ claim 28, wherein L^{M1} comprises an NHS ester crosslinker and the compound has the structure:



wherein p is 0-5.

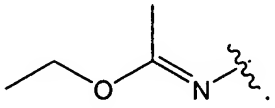
30. **(Currently Amended)** The compound of ~~claim 29~~ claim 28, wherein ~~L^1~~ L^{M1} comprises a maleimide crosslinker and the compound has the structure:



;

wherein p_1 and p_2 are independently integers from 1-5.

31. **(Currently Amended)** The compound of ~~claim 29, 30 or 31~~ claim 28, 29 or 30, wherein $R^{N1}R^{N2}N$- is a moiety having the structure:



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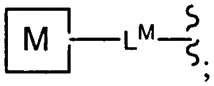
32. **(Original)** A method for preparing a conjugate comprising a carrier substituted with one or more occurrences of a moiety having the structure:



;

wherein each occurrence of M is independently a modifier; and

each occurrence of L^M is independently an oxime-containing linker;

said method comprising steps of:

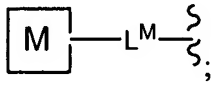
providing a carrier;

providing one or more modifiers;

providing one or more compounds having the structure: $R^{N1}R^{N2}N$-O-L^1; wherein R^{N1} and R^{N2} are independently hydrogen, an aliphatic, alicyclic, heteroaliphatic, heterocyclic, aryl or heteroaryl moiety, or a nitrogen protecting group, or R^{N1} and R^{N2} , taken together, form a substituted or unsubstituted alicyclic, aryl or heteroaryl moiety; and each occurrence of L^1 is independently an aliphatic, alicyclic, heteroaliphatic, heterocyclic, aryl or heteroaryl moiety comprising a functional group adapted for covalent binding to the modifier; and

reacting the one or more compounds of structure $R^{N1}R^{N2}N$-O-L^1 with the carrier and the one or more modifiers under suitable conditions so that at least one –O-$NR^{N1}R^{N2}$ moiety is covalently attached to the carrier via an oxime linkage, thereby generating the conjugate.

33. **(Original)** A method for preparing a conjugate comprising a carrier substituted with one or more occurrences of a moiety having the structure:



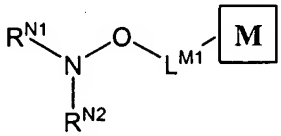
wherein each occurrence of M is independently a modifier; and

each occurrence of L^M is independently an oxime-containing linker;

said method comprising steps of:

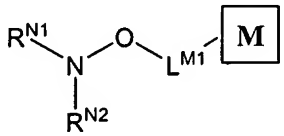
providing a carrier;

providing one or more compounds having the structure:



wherein L^{M1} is a substituted or unsubstituted, cyclic or acyclic, linear or branched C_{0-12}alkylidene or C_{0-12}alkenylidene moiety wherein up to two non-adjacent methylene units are independently optionally replaced by CO, CO_2, COCO, $CONR^{Z1}$, $OCONR^{Z1}$, $NR^{Z1}NR^{Z2}$, $NR^{Z1}NR^{Z2}CO$, $NR^{Z1}CO$, $NR^{Z1}CO_2$, $NR^{Z1}CONR^{Z2}$, SO, SO_2, $NR^{Z1}SO_2$, SO_2NR^{Z1}, $NR^{Z1}SO_2NR^{Z2}$, O, S, or NR^{Z1}; wherein each occurrence of R^{Z1} and R^{Z2} is independently hydrogen, alkyl, heteroalkyl, aryl, heteroaryl or acyl; and R^{N1} and R^{N2} are independently hydrogen, an aliphatic, alicyclic, heteroaliphatic, heterocyclic, aryl or heteroaryl moiety, or a nitrogen protecting group, or R^{N1} and R^{N2}, taken together with the nitrogen atom to which they are attached, form a substituted or unsubstituted heterocyclic or heteroaryl moiety; and

reacting the carrier with the one or more compounds of structure:

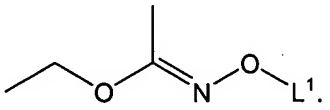


under suitable conditions so that at least one $-O-NR^{N1}R^{N2}$ moiety is covalently attached to the carrier via an oxime linkage, thereby generating the conjugate.

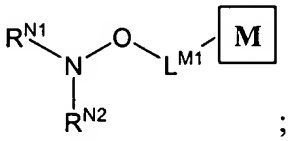
34. **(Original)** The method of claim 32 or 33, wherein R^{N1} and R^{N2} are each hydrogen.

35. **(Original)** The method of claim 32, wherein in the one or more compounds of structure $R^{N1}R^{N2}N\text{-}O\text{-}L^1$; at least one of R^{N1} and R^{N2} is a nitrogen protecting group; and the method further comprises the step of hydrolyzing the one or more compounds having the structure $R^{N1}R^{N2}N\text{-}O\text{-}L^1$ to form one or more compounds having the structure $H_2N\text{-}O\text{-}L^1$ prior to reacting with the carrier.

36. **(Original)** The method of claim 35, wherein in the one or more compounds of structure $R^{N1}R^{N2}N\text{-}O\text{-}L^1$, $R^{N1}R^{N2}N\text{-}$ has the structure $CH_3CH_2OC(CH_3)=N\text{-}$; and the one or more compounds have the following structure:

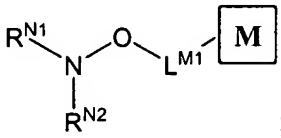


37. **(Original)** The method of claim 33, wherein in the one or more compounds of structure



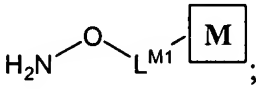
;

at least one of R^{N1} and R^{N2} is a nitrogen protecting group; and the method further comprises the step of hydrolyzing the one or more compounds having the structure:



;

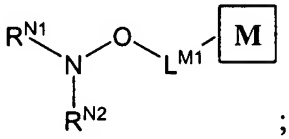
to form one or more compounds having the structure:



;

prior to reacting with the carrier.

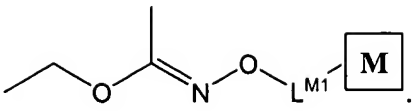
38. **(Original)** The method of claim 37, wherein in the one or more compounds of structure:



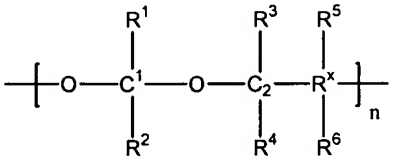
;

$R^{N1}R^{N2}N\text{-}$ has the structure $CH_3CH_2OC(CH_3)=N\text{-}$; and the one or more compounds have the

following structure:

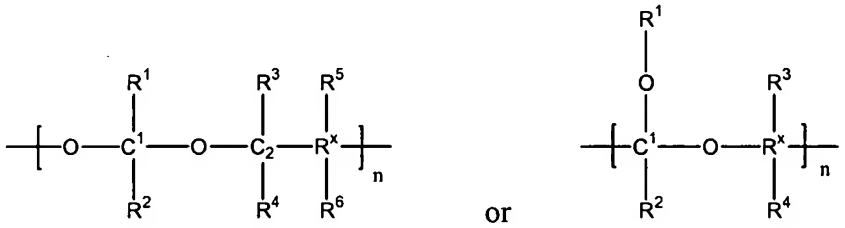


39. **(Original)** The method of claim 32 or 33, wherein the carrier is a biodegradable biocompatible polyacetal wherein at least a subset of the polyacetal repeat structural units have the following chemical structure:



wherein for each occurrence of the n bracketed structure, one of R^1 and R^2 is hydrogen, and the other is a biocompatible group and includes a carbon atom covalently attached to C^1; R^x includes a carbon atom covalently attached to C^2; n is an integer; each occurrence of R^3, R^4, R^5 and R^6 is a biocompatible group and is independently hydrogen or an organic moiety; and for each occurrence of the bracketed structure n, at least one of R^1, R^2, R^3, R^4, R^5 and R^6 comprises an aldehyde moiety.

40. **(Original)** The method of claim 32 or 33, wherein the carrier is a biodegradable biocompatible polyketal wherein at least a subset of the polyketal repeat structural units have the following chemical structure:



wherein each occurrence of R^1 and R^2 is a biocompatible group and includes a carbon atom covalently attached to C^1; R^x includes a carbon atom covalently attached to C^2; n is an integer; each occurrence of R^3, R^4, R^5 and R^6 is a biocompatible group and is independently hydrogen or an organic moiety; and for each occurrence of the bracketed structure n, at least one of R^1, R^2, R^3, R^4, R^5 and R^6 comprises an aldehyde moiety.

41. **(Original)** A composition comprising the conjugate of claim 1 and a pharmaceutically suitable carrier or diluent.

42. **(Original)** A composition comprising a conjugate of claim 1 associated with an effective amount of a therapeutic agent; wherein the therapeutic agent is incorporated into an released from said conjugate matrix by degradation of the conjugate matrix or diffusion of the agent out of the matrix over a period of time.

43. **(Original)** The composition of claim 42 wherein said conjugate is further associated with a diagnostic agent.

44. **(Currently Amended)** A method of administering to a patient in need of treatment, comprising administering to the subject an effective amount of a suitable therapeutic agent; wherein said therapeutic agent is associated with and released from a conjugate of ~~claims 1~~ claim 1 by degradation of the conjugate matrix or diffusion of the agent out of the matrix over a period of time.

45. **(Original)** The method of claim 44 wherein said therapeutic agent is locally delivered by implantation of said conjugate matrix incorporating the therapeutic agent.

46. **(Original)** The method of claim 44 wherein said therapeutic agent is selected from the group consisting of: vitamins, anti-AIDS substances, anti-cancer substances, antibiotics, immunosuppressants, anti-viral substances, enzyme inhibitors, neurotoxins, opioids, hypnotics, anti-histamines, lubricants, tranquilizers, anti-convulsants, muscle relaxants and anti-Parkinson substances, anti-spasmodics and muscle contractants including channel blockers, miotics and anti-cholinergics, anti-glaucoma compounds, anti-parasite and/or anti-protozoal compounds, modulators of cell-extracellular matrix interactions including cell growth inhibitors and anti-adhesion molecules, vasodilating agents, inhibitors of DNA, RNA or protein synthesis, anti-hypertensives, analgesics, anti-pyretics, steroidal and non-steroidal anti-inflammatory agents, anti-angiogenic factors, anti-secretory factors, anticoagulants and/or antithrombotic

agents, local anesthetics, ophthalmics, prostaglandins, anti-depressants, anti-psychotic substances, anti-emetics, imaging agents.

47. **(Original)** The method of claim 44 further comprising administering with the therapeutic agent additional biologically active compounds selected from the group consisting of vitamins, anti-AIDS substances, anti-cancer substances, antibiotics, immunosuppressants, anti-viral substances, enzyme inhibitors, neurotoxins, opioids, hypnotics, anti-histamines, lubricants, tranquilizers, anti-convulsants, muscle relaxants and anti-Parkinson substances, anti-spasmodics and muscle contractants including channel blockers, miotics and anti-cholinergics, anti-glaucoma compounds, anti-parasite and/or anti-protozoal compounds, modulators of cell-extracellular matrix interactions including cell growth inhibitors and anti-adhesion molecules, vasodilating agents, inhibitors of DNA, RNA or protein synthesis, anti-hypertensives, analgesics, anti-pyretics, steroidal and non-steroidal anti-inflammatory agents, anti-angiogenic factors, anti-secretory factors, anticoagulants and/or antithrombotic agents, local anesthetics, ophthalmics, prostaglandins, anti-depressants, anti-psychotic substances, anti-emetics, imaging agents, and combination thereof.

48. **(Original)** The method of claim 44 wherein said conjugate further comprises or is associated with a diagnostic label.

49. **(Original)** The method of claim 48 wherein said diagnostic label is selected from the group consisting of: radiopharmaceutical or radioactive isotopes for gamma scintigraphy and PET, contrast agent for Magnetic Resonance Imaging (MRI), contrast agent for computed tomography, contrast agent for X-ray imaging method, agent for ultrasound diagnostic method, agent for neutron activation, moiety which can reflect, scatter or affect X-rays, ultrasounds, radiowaves and microwaves and fluorophores.

50. **(Original)** The method of claim 48 wherein said conjugate is further monitored *in vivo*.

51. **(Original)** A method of administering a conjugate of claim 1 to an animal, comprising preparing an aqueous formulation of said conjugate and parenterally injecting said formulation in the animal.

52. **(Original)** The method of claim 51, wherein said conjugate comprises a biologically active modifier.

53. **(Original)** The method of claim 51, wherein said conjugate comprises a detectable modifier.

54. **(Original)** A method of administering a conjugate of claim 1 to an animal, comprising ~~preparating~~ preparing an implant comprising said conjugate, and implanting said implant into the animal.

55. **(Original)** The method of claim 54, wherein said implant is a biodegradable gel matrix.

56. **(Original)** A method for treating of an animal in need thereof, comprising administering a conjugate as in claim 51 or 54, wherein said conjugate is associated with a biologically active component.

57. **(Original)** A method for treating of an animal in need thereof, comprising administering a conjugate as in claim 51 or 54, wherein said conjugate comprises a biologically active modifier.

58. **(Original)** The method of claim 57, wherein the biologically active component is a gene vector.

59. **(Original)** A method for eliciting an immune response in an animal, comprising administering a conjugate as in claim 51 or 54, wherein said conjugate comprises an antigen modifier.

60. **(Original)** A method of diagnosing a disease in an animal, comprising steps of:

administering a conjugate as in claim 51 or 54, wherein said conjugate comprises a detectable modifier; and

detecting the detectable modifier.

61. **(Original)** The method of claim 60, wherein the step of detecting the detectable modifier is performed non-invasively.

62. **(Original)** The method of claim 61, wherein the step of detecting the detectable modifier is performed using suitable imaging equipment